

REMARKS/ARGUMENTS

In response to the Office Action dated October 27, 2010, Applicants amend their application and request reconsideration. In this Amendment no claims are cancelled and new claims 15-20 are added so that claims 1-20 are now pending.

In this amendment the originally examined claims are amended, consistent with the patent application, principally for clarity. The claim amendments are fully supported by the patent application as filed.

Amended claim 1, the only examined independent claim, now describes the relay antenna as providing a first wireless link with a mobile station. As shown in Figure 1 of the patent application, the mobile station is represented by a mobile telephone 1 and the relay antenna, in that embodiment, is given reference number 5. The wireless link is not given a reference number but is indicated by the arrows between the mobile telephone 1 and the relay antenna 5.

As shown in that Figure 1 and further in the embodiment of Figure 8, appearing on the same sheet with Figure 1, the relay antenna 5 is associated with, i.e., dedicated to, a single stationary or fixed station. As described in paragraph [0015] of the specification (see the RCE Amendment),

“communication goes from a relay antenna 5 for communicating with the mobile telephone 1 by means of a data transmission link 6 to a fixed assembly consisting of a radiocommunication station 7, which is a *base transmission system*[,] usually referred to as BTS (Base Transceiver System), a base control station 8[,] usually referred to as a BSC (Base Station Controller)[,] and a communication center 9 called MSC (Mobile Switching Center).” {Emphasis added.}

In amended claim 1, that fixed assembly is referred to as a Base Transceiver System station, essentially the same term used in the specification. This change in name is based upon the prior art rejections discussed below and the Examiner's

comment at page 8 of the Office Action dated October 27, 2010. An important feature of the invention is that the relay antenna 5 of Figure 1 is dedicated to, i.e., associated with, a particular base transceiver system (BTS) station and that a second wireless link, given reference numbers 6 and 14 in Figure 1, provides the communication between the relay antenna and its associated BTS station. According to the patent application, the transmission occurs between a housing 12 at the relay antenna 5 and a housing 13 at the BTS station. Figure 8 of the patent application illustrates an embodiment in which multiple relay antennas are present. As indicated by the broken lines in that figure. Each relay antenna has a single associated BTS station with which it communicates via a respective wireless link.

The final paragraph of claim 1 has been revised to make clear that the demodulator that is present at the relay antenna 5 provides a signal of a lower frequency than the frequency that is used by the mobile system. That lower frequency signal is employed in the communication on the second wireless link, i.e., between the relay antenna and the BTS station that is associated with the respective (BTS) station.

The amendments to claims 2-14 are intended solely to conform those claims to the amendments of claim 1 and, in a few instances, to correct apparent informalities or non-uniformities among the claims.

New claim 15 is based upon examined claim 1 but describes a communications network that employs a plurality of relay antennas and a plurality of BTS stations. As already explained, Figure 1 illustrates an embodiment of the invention employing only a single relay antenna but Figure 8 illustrates a system employing a plurality of relay antennas. That figure and the description in paragraph [0029] of the patent application, as filed, provide support for new claim 15.

New claims 16-20 are respectively copied from claims 3-7 but depend directly or indirectly from claim 15. Further, the copied claims are revised to be consistent with new claim 15.

As explained in the patent application, a very important feature of the invention is the use of the second wireless link that provides a connection between a relay antenna and the associated base transceiver system station. In the prior art, this communication link

was a hard-wired connection. Generally, a coaxial cable was employed. The relay antenna is typically placed at a high elevation, for example, on the roof of a building. The fixed station is usually within the building, possibly at a lower floor. As a result, installation of the relay antenna and the fixed station was complicated and time consuming because a coaxial cable connection had to be established. Further, the coaxial cable connection required testing with equipment that is difficult to transport, heavy, and expensive. The invention resolves those problems by providing a relatively low frequency wireless communication link between the relay antenna and its associated BTS station. See the description of the prior art problem in paragraph [0002] of the patent application. All paragraph numbers here refer to the patent application as filed, not as published.

Examined claims 1-5 and 9 were rejected as unpatentable over Schmutz (Published U.S. Patent Application 2001/0031624) in view of Anders et al. (U.S. Patent 4,827,395, hereinafter Anders). This rejection is respectfully traversed, particularly as to the claims now presented.

In the rejection of claim 1, reliance was placed upon Figure 1 of Schmutz. Applicants agree that Figure 1 of Schmutz shows a system for communication between fixed base transceiver stations and respective mobile units, illustrated as a mobile telephone 18-1 and a vehicle with an antenna 18-2. Those mobile stations communicate with base stations via respective translator repeater stations over wireless links 13 employing antennas 14-1...14-m of respective base transceiver stations 15-1...15-m. In the Schmutz system, each base transceiver system has an associated or dedicated respective antenna 14. In other words, those antennas 14 correspond to the relay antennas of the invention. In Schmutz, translator repeater stations 12 are interposed between the mobile stations and the BTS stations. However, there is no one-to-one relationship between the BTS stations and the translator repeater stations in Schmutz. Therefore, there is no basis for interpreting the antennas of the translator repeater stations in Schmutz as corresponding to the relay antennas of the invention.

An important point of the invention is that information is conveyed between the respective relay antennas and the BTS stations via a wireless link, the second wireless

link of the claims. In Schmutz, that information is transmitted via wired connections, as shown in Figure 1 of Schmutz. Where Schmutz desires to indicate wireless links, the typical indicators of wireless communication are shown, as in Figure 1 of Schmutz. The connections between the respective relay antennas 14 and the corresponding BTS stations in Schmutz are entirely conventional hard-wired connections that are not even given reference numbers. Therefore, Schmutz fails to describe or suggest the second wireless links of independent claims 1 and 15.

According to pages 7 and 8 of the Office Action, the former claims did not recite the presence of BTS stations. Therefore, those claims were stated to differ from the arguments previously presented. While Applicants disagree with that view, the claim amendments made here prevent the former claim interpretation, and the application of Schmutz as applied in the rejection of the Office Action of October 27, 2010.

The hard-wired connections between the relay antennas and the associated BTS stations in Schmutz do not include demodulators because the hard-wired connection eliminates any need for or a useful function that could be provided by a demodulator.

In attempting to supply the demodulator of claim 1, reliance was placed on Anders. This reliance is misplaced for two independent reasons. Anders' demodulator units are described in Anders from column 23, line 37 through column 24, line 7.

First, as already stated, because there is no wireless link between the relay antenna 14 in Schmutz and the corresponding BTS station, no one of skill in the art would insert a demodulator within the hard-wired connections as illustrated in Figure 1 of Schmutz.

Second, Anders describes two demodulators in its Figure 6, elements 72 and 76, apparently within a hard-wired signal processor. However, that arrangement cannot suggest a modification of Schmutz by the insertion of a demodulator within a cable that merely transmits signals and does not provide for nor have reason for signal processing, as in Anders. In Anders it is understood that the demodulator unit 72 is only optional and is employed to provide easier amplification of a demodulated signal if the signal received through an antenna is too weak. There is no indicated amplifier in the hard-wired, i.e., not wireless, connection of the antenna 14 to the BTS station 15 of Schmutz. Therefore, Anders' reason for adding demodulator 72 does not suggest any reason for adding a

demodulator to Schmutz. The other demodulator unit in Anders' Figure 6, element 76, is provided to generate a signal for charging a power unit that might be, for example, a capacitor or a rechargeable battery. Since there is no such function in Schmutz, particularly between the antenna 14 and the BTS station 15, there is no reason to insert the second demodulator of Anders into the hard-wired connection of Schmutz.

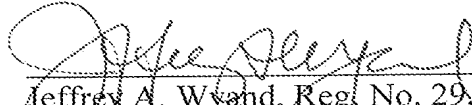
Since Schmutz can no longer be applied in the way it was applied in the previous prior art rejection, and neither Schmutz nor Anders suggests the insertion of a demodulator in a simple hard-wired connection, the rejection is erroneous. Upon reconsideration, the rejection of claims 1-5 and 9 should be withdrawn. For the same reasons, that rejection is not applicable to any of claims 15-20.

Claims 6-8 and 10-14 were rejected as unpatentable over Schmutz, in view of Anders, and further in view of Baker et al. (Published U.S. Patent Application 2003/0232595, hereinafter Baker). This rejection is respectfully traversed, particularly as to the claims now pending.

Each of the rejected claims 6-8 and 10-14 is a dependent claim. There is no suggestion in the discussion of the rejection of those claims at pages 5-7 of the Office Action that Baker supplies any of the elements of claim 1 that are clearly absent from the asserted combination of Schmutz and Anders. Therefore, even if Baker should supply the limitations of the rejected dependent claims 6-8 and 10-14, the rejection of those claims is still erroneous because of the failure of Schmutz and Anders to meet the limitations of claim 1. Therefore, further and separate discussion of the rejection of claims 6-8 and 10-14 is neither necessary nor provided.

Reconsideration, withdrawal of the rejections, and allowance of all of claims 1-20 are earnestly solicited.

Respectfully submitted,



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Date: March 22, 2011
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